TWENTY-PAGES. THE SEATTLE POST-INTELLIGENCER. (PAGES 17 TO 20.)

SEATTLE, WASHINGTON, SUNDAY, FEBRUARY 16, 1896.

THE ROENTGEN LIGHT.

Explanation of Photography Through Solid Bodies.

PROPERTIES OF CATHODE RAYS.

They Pass Through Books, Sheets of Metal and Flesh—Photographing the Human Body's Interior.

Edwin H. Hall in New York Sun.

Scientific men who have kept track of electrical investigations carried on in Germany during recent years are surprised more by the magnitude than by the character of the achievements now credited to Roentgen of Wurzburg in the application of cathode rays to photography. According to the accounts published in newspapers—for no description of his work has yet reached this country through scientific journals—this experimenter has succeeded in photographing bones through the flesh of living limbs, coins through a leather envelope, and iron through the wall of a wooden box. Hertz, whose name is known to all the world, showed four years ago that the so-called cathode rays, generated by electrical discharges through a rarefied gas, would pass through metal films impervious to ordinary light, and produce optical effects beyond. Leenard, of Bonn, succeeded Hertz in this particular line of investigation, and has been until now the chief authority as to the penetrative power of these rays. In Wiedemann's Annalen for October, 1895, he has an article the opening paragraph of which will show the point which his experiments had reached at the time he wrote, and will explain why scientific men in this country were not prepared for the announcement of Roentgen's brilliant work. Leenard says in substance:

"Since it has been shown that certain metals are permeable by cathode rays, it is now in order to test the permeability of other materials. It appears that not metals alone, but all kinds of solids also are permeable, though all in only very thin delicate sheets. No solid body has been found to act toward cathode rays as glass acts toward light. Gaseous bodies are much more permeable than solids, and may be penetrated for centimeters."

He goes on to say that, having tried many solid and gaseous bodies, he is led to the conclusion that the permeability of a body is pretty nearly proportional to its density (or specific gravity), without much regard to the state of aggregation or to the material of the body. For instance he gives:

	Absorptive Power.	Density.	Absorptive Power Density.
Air	3.42	.00123	2780
Collod'n film	3310	1.10	3010
Paper	2600	1.20	2070
Aluminum	7150	2.70	2650
Gold	55600	19.3	2880

Absorptive power is the opposite of permeability.

Apparently his experiments were limited, in the case of solid bodies, to sheets a few thousandths of an inch in thickness, although sheets somewhat thicker would have been permeable to a certain extent. He has shown, however, that the behavior of cathode rays varies somewhat with the manner or circumstances of their production, and it is quite possible that Roentgen has hit upon a much more powerful method of producing them than Leenard used. Hence, though it is well to wait for fuller details before accepting in full the remarkable stories of Roentgen's work, it would be rash to deny the possibility of their truth. Meanwhile a brief explanation of the terms used in connection with his work may be of interest.

Faraday, studying the galvanic cell some sixty years ago, felt the need of definite short names for the conductors by which the current of electricity, to use the common phrases, enters and leaves the cell. Faraday's education, like that of Edison, was not obtained at school, and he knew no Greek, but a learned friend furnished him with the term "anode" (upward way) for the conductor taking the current into the cell, and "cathode" (downward way) for that leading the current out from the cell. The two together were called electrodes

A few years later Faraday studied the discharge of electricty from one piece of metal to another across a space containing rarefied air within a glass vessel. The pieces of metal leading the current in and out are called, as in the galvanic cell, the anode and the cathode respectively, and Faraday observed, as others had done, that the spark or brush or glow occurring within the tube during the passage of electricity was not of the same appearance at the two electrodes. He studied the phenomena with care, and suggested that the difference observed was due to a difference in the state of polarity or electric charge of the gas in the neighborhood of the two electrodes. This suggestion is by no means out of date, although it can hardly be said that this or any other theory of the matter has been generally accepted as satisfactory.

After Faraday came certain German experimenters who made a special study of similar effects. Geissler made such advances in the apparatus used for showing electric discharge in rarefied air, substituting permanently sealed tubes with platinum electrodes for the comparatively clumsy and inconvenient apparatus of his predecessors, that the term "Geissler tube" soon became familiar in scientific literature. Geissler's improvements in the air pump enabled him to carry the rarefaction of the air to a high degree. The current is usually driven through the tubes by a Ruhmkorff induction coil, which furnishes a rapidly interrupted current. Ingenuity and mechanical skill were lavished upon the production of new forms and varieties of Geissler tubes, containing rarefied air, oxygen, hydrogen, etc., each showing its peculiar kinds of light, all of them beautiful and most of them inexplicable.

But in all, or nearly all, of them the cathode during action was surrounded by a narrow, colorless, or dark space outside, which was a glow of blue or violet light. The space around the anode and the greater part of the whole tube were also generally luminous, but in a different and far less clearly defined manner. It was evident, too, that more heat was generated at or near the cathode than elsewhere in the tube. The cathode, therefore, became the center of interest.

It was a common thing to use in the construction of Geissler tubes a kind of glass called uranium glass, which has the peculiarity of giving out a greenish light when exposed to rays of light containing no green whatever. This kind of effect, which is shown in some form by various other substances, fluor-spar, for instance, is called fluorescence. It was observed that the influence, whatever it might be, that especially produced fluorescence in Geissler tubes came from the cathode. It was observed, too, that this influence in very highly rarefied tubes appeared to come along straight lines from the cathode, and so the term "cathode rays" came into use, being suggested, of course, by the term light rays, although it was by no means certain that the cathode rays were rays of light.

Indeed, William Crookes, a distinguished English chemist, the inventor of the beautiful and interesting scientific toy called the radiometer or light mill, advanced the opinion that the so-called cathode rays were particles of matter, in what he called the "ultra gaseous" state, projected in straight lines from the cathode upon neighboring parts of the apparatus. Crookes, who is a man of great experimental resources, devised new forms of apparatus of such extraordinary interest that the term Crooker tube has now in great measure replaced the term Geissler tube.

But though the light generated in a rarefied gas, or in a fluorescent substance within the tube, by means of the cathode rays could readily be seen through the wall of the tube, it was observed that uranium glass placed near the cathode but outside the tube was not affected. That is, the cathode rays themselves, whatever they might be, could not pass through the thin glass wall of the vacuum tube. This was the condition of affairs when Hertz showed the cathode rays to have the power of passing through the thin sheets of metal placed inside the vacuum tube. The next step, taken by Leenard, was to replace a very small part of the glass wall of the tube by a very thin piece of aluminum. This little spot of aluminum set in a glass wall he called a window, and through this window, which ordinary light could not traverse, the cathode rays which could not penetrate the glass went out into the open air, which they penetrated to a distance of about three inches, spreading out in all directions from the window as a center. They passed through the window in preference to the glass merely because the metal was thinner than the glass. Their presence in the air was shown by the faint glow of the air itself, by photographic effects, and by fluorescent effects, like those already described, but neither the skin nor the eye exposed directly to the rays after they had passed the window gave any sensation.

If the cathode rays are light rays, they are apparently of the sort called ultra-violet, rays, which in passing through a prism are refracted more than the violet rays of ordinary sunlight. It is well known that such rays exist, and that they are effective in photography, though our eyes are incapable of getting any sensation directly from them. It need not surprise us to find that there are ultra-violet rays which do not readily penetrate glass, as there are other well-known rays which do not penetrate glass. The surprising characteristic of cathode rays, as Leenard has found them, is the uniform difficulty they have in passing through bodies of different materials. Apparently Roentgen finds much less uniformity in this particular.

Leenard seems to consider cathode rays as of the same nature with common light rays, but of much shorter wave length. He compares the obstruction they meet in passing through air with the obstruction ordinary light has in passing through a space partially filled with particles of a sensible size, dust particles, for instance. A serious objection to this view is the fact, recorded by Leenard himself, that cathode rays are apparently deflected by a magnet, somewhat as a current of electricity is deflected, whereas common light, though yielding in some ways to magnetic influence, is not so affected.

SURGEONS USING IT ALREADY.

Remarkable Outcome of the Discovery of the New Photography.

New York Sun.

London, Jan. 25.—Never in the history of science has a great discovery received such prompt recognition and been so quickly utilized in a practical way as the new photography which Prof. Rontgen gave to the world only three weeks ago. Already it has been used successfully by European surgeons in locating bullets and other foreign substances in human hands, arms and legs, and in diagnosing diseases of the bones in various parts of the body. It is almost an old story now in its first features, and these seemingly miraculous photographs are easily produced in many physical laboratories, while technical journals are publishing reproductions in their pages. The fact that only a faint idea has yet been gained of the practical possibilities of this discovery is already proven, and it is difficult to keep pace with the astonishing supplementary disclosures.

The most important of these is the application of the new omniscient agent to metallurgy. It has been found that although most metals are apparently opaque to the rays of this strange light or force, yet any internal defects or lack of homogeneity in them are quickly detected and recorded on the tell-tale plate. The sensitiveness and accuracy of the negatives in this respect are described as marvelous.

No two metals are alike under this new test. Lead proves to be almost as transparent as aluminum and wood. Hitherto it has not been possible without a complicated process to test the uniformity of structure of metal work, for instance, gun barrels, iron rails, railroad wheels, or to distinguish at sight the different varieties of iron and steel. All this, it is anticipated, will be shortly achievable by the help of the new photography. It is no exaggeration to say that this would mean the complete revolution of many branches of metallic industry, especially in the manufacture of arms.

Exact reproductions have been obtained of inscriptions or relief drawings on signet rings and metallic surfaces. To the great astonishment of the experimenters, it was found that metallic objects exposed to Rontgen's rays show in the photographic reproduction all inequalities that exist in the structure of metals, such as fractures and cavities. This quality theorists recognize as being due to the great sensitiveness of the rays to variations in the thickness. All alloys or composite metals—and most of those used in the manufacture of arms are composite—show on the photographic plate whether they are completely homogeneous throughout and where and to what extent one metal, for instance, zinc or copper in the so-called steel bronze cannon, has not thoroughly amalgamated with another. Owing to the intensity of the photographic picture obtained by the new rays, carbon is readily distinguished from iron, and hence it will be possible to recognize the quality of iron or steel. The rays will also probably furnish a simple method of control in the Bessemer process.

The inference from the latest experiments is that nothing is absolutely impenetrable to these strange rays. There are only varying degrees of transparency or opacity. Prof. Rontgen took a photograph the other day of a large metal plate which had been broken in various pieces and welded together, and so carefully joined that the lines of fracture were imperceptible under the strongest ordinary light. The so-called X rays made them as plain as day on the photograph.

Prof. Czermark, of Graz, has succeeded in photographing a living skull without its fleshly integument. The editor of the Grazer Tageblatt offered his head for the purpose. When he saw the result he positively refused to allow the picture to be reproduced or shown to any one except men of science. It is reported that he has not slept a wink since he saw his own death's head. I have already mentioned the important fact that these new rays are incapable of being deflected by lenses or any substance. Prof. Rontgen deduces from this that perhaps the rays move with the same velocity in all bodies and in some all-pervading medium with which the molecules of all bodies must be surrounded. No effect could be observed on these rays by magnetic influence. From which fact Prof. Rontgen argues that they differ from Cathode rays, investigated by Prof. Lenard. To the question what are these X rays if they are not Cathode rays, Prof. Rontgen brings forth the hypothesis that possibly their existence may be ascribed to longitudinal waves in the ether. The existence of such longitudinal waves, as apart from the transverse vibrations which account for the phenomena of the light, has before now, from theoretical considerations, been suspected by physicists, although there has been no experimental evidence yet brought forward to show their existence. If this should, on fuller investigation, really turn out to be the case, and the X rays of Prof. Rontgen are really due to such longitudinal vibrations, a great step forward will have been made in the theoretical conception of wave motion.

There are already several claims that Prof. Rontgen's discovery has been anticipated. The photography of the invisible has been accomplished before, but not, Prof. Rontgen protests, by his method. The most remarkable instance was an experiment by Prof. Zeugen in 1883. He focussed Mount Blanc in an ordinary camera toward evening from the window of a hotel at Geneva. He waited until he could not discern a vestige of the mountain through an opera glass, then opened the apparatus and left the plate exposed until midnight, when he found he had obtained an excellent picture. He explains the process thus:

It is clear that in an electric discharge from mountain tops toward the heavens above them the mountains are negative poles while the clouds represent positive poles. Now the cathodic light thus produced is too weak to light up the mountain in the middle of the night so as to make it visible to the human eye; but the strata of ice and chalk embedded in it are excited to lively fluorescence and phosphorescence, and thus are very sensitve to photographic plates, which receive the picture in the darkest night.

EZRA MEEKER IN ENGLAND.

He Visits the Kent Hop Fields and Considers the Hop Situation.

London, Jan. 25, 1896.

To the Editor: I was out today to that quaint old town, Maidstone, on the "Midway," in the great East Kent hop district of England. Many of the principal streets are crooked, narrow lanes, not more than a rod and a half wide, with narrow sidewalks of stone, with graveled roadbed for the street. Of the 58,750 acres of hops in England, 35,000 are in the Kent districts, much of which is tributary to this town; in fact, it is the great hop center of England.

I went out on "market day," when many factors of London and growers meet, and saw a number of growers who were anxious to see that "arch enemy of the hop growers of England," some of whom could not disguise their ill-feeling against the Yankees for destroying their business. The English growers attributed all their woes to the American hop growers, forgetting that their heaviest losses are caused by the production of poor quality. In this district, however, the proportion of poor hops is much less than in many other parts. In nearly every case the growers insisted they would go right on growing hops until "you have enough of it," meaning that pay or no pay, they intended to fight the American hop growers to the bitter end. Some, no doubt, will, while others will not.

I walked out in the early morning to the old church yard, and to see the old hop house just beyond, said to have been built by the monks A. D. 1490. The position of the old church to the hop houses was such that one could readily see that each formed a part of a large inclosure wall of a large court, in the midst of which stood a group of low buildings, known as the "tithe stables," where the people used to come and deposit their tenth bushel, or part of all they produced in kind, and in return received absolution from their sins, present and future. At one end of the hop buildings, which were of stone, was a massive stone archway (through which is now a wagon passageway), that shows plainly was one of the entrances to the court. Tradition says on one of the angles was a brewery, where the monks used to brew their beer and have a jolly good time after prayer. There are yet traces of the old hop yard near by, known to have been in hops 150 years, but now laid by to rest. I could not trace inscriptions on the tombstones much over 200 years old, though it was said there were graves both inside and outside the church over 500 years old. Those old stones outside were so weather worn that the inscriptions were destroyed, showing how vain it was for man to undertake to perpetuate the memory of the dead, except for a few fleeting years.

But it was not of this that I set out to write, nor is it what your readers want to hear. The question is, What about the hop situation? What is to become of us poor mortals engaged in this "nefarious" traffic, "cursed by God?" That is what the troubled hop farmers of England are asking themselves, and asking, What are we to do if we go out of the hop business? Grain does not pay the expenses of raising; Yankee beef is cutting into the cattle trade; hay won't pay. "What shall we do?" the English farmers are asking themselves. Thousands upon thousands of acres of wheat land (one-fifth of the area) was last year turned out to pasture, and now the seeming alternative is to do the same with hops. All agree there are too many hop growers. Last year's crop sold for less than cost of production, and this year's (1895 crop) is much worse, causing the loss of vast sums of money. The hop warehouses of London are full of hops. Recently 5,000 bales of English growth of the 1894 crop sold for 2 cents per pound, and this year more than five times 5,000 bales of the 1895 crop have sold for no more than 5 cents per pound, or, in other words, about one-third the cost of production. Nevertheless there are large blocks of the English growth that have been taken at equal cost, and in a few cases more. Choice hops from all districts, either English or American, are scarce and relatively high, yet dragged down by the dead weight of lower grades. I told the English growers that where they have not heretofore been producing choice hops they had better quit. The same remark will apply to the American grower as well, wherever he is. The present excess of acreage, if continued, is certain to keep choice hops down in the markets to cost and the lower grades to the point of heavy loss.

No one can even guess how many hops less will be grown in England this year than last. There will be a few yards grubbed, yet more turned out to pasture and the roots preserved, while the greater part will be cultivated more or less carelessly, all of which will tend to materially lessen next year's crop in England.

Surplus or no surplus, if our Pacific coast hops are promiscuously thrown upon this market, as for a few years last past, they will be ruthlessly slaughtered, as in the past. Twenty different houses have been receiving consignments competing against each other, some of whom are strangers to the value of such hops. If one crop is slaughtered another is sure soon to follow, and again another, until a lower market rate becomes an established fact. The English are shrewd buyers, and know how to bide their time and wait. The growers have recently had the experience, while the buyers have gotten the hops almost at their own price. This doubtless is the greatest hop market in the world, but it is also the greatest mill to grind down prices. Great sums are invested in the business—some would estimate $20,000,000—so one can readily see how powerful is the arm that influences the market.

I landed here amidst the storm of mad excitement that swept over the island, first because of President Cleveland's message and then Dr. Jameson's foolish act. The newspapers here fanned the flame of warcry for a while, assuming that the American people were not in earnest, but now a different tone is noticeable both from government sources and press. The pulpit spoke right all the time. But all this is ancient history in a measure, having been anticipated by the cable.

E. MEEKER.

DIVISION OF LABOR.

Bill—Yer look flourishin', 'Arry.

'Arry—Yus; my ole woman's laundry business is doin' fairly well. I'm a-airin' o' one o' the wite weskits now.—Judge.

MODERN KINGS SOBER

An Example Set in Abstemiousness to Their Subjects.

DRUNKENNESS IS BAD FORM.

Prussia, Holland, Italy and Sweden Had Alcoholic Kings—Queen Victoria's Influence.

Ex-Attache in the New York Tribune.

While statisticians are at variance as to whether the amount of crime and insanity due to the abuse of stimulants shows any serious signs of decline, yet they are perfectly agreed upon one significant and gratifying fact, namely, that drunkenness is each year becoming more and more restricted to the ignorant and poverty-stricken masses, occupying the lowest degree of the social and intellectual scale. While this is manifestly attributable, in the main, to the extraordinary progress and rapid extension of popular education since the last three or four decades, it is likewise due, in no small measure, to the example set by those who, as sovereigns and as princes of the blood, may be justly regarded as leading the fashions, influencing the manners, and acting as arbiters of society in monarchical countries.

Inebriety is no longer fashionable, as it was in the times of their fathers and grandfathers, when a man who went to bed sober was regarded with distrust as a moral anomaly, and the diner who could not put away at least his three bottles of port at a sitting was unworthy of the title of gentleman. Today drunkenness is condemned as bad form, and society, instead of viewing it with favor, or even with good-natured indulgence, frowns upon it with every manifestation of disgust and even anger. For this radical transformation of an old-time custom and fashion, Europe is indebted to those who act as its leaders in such matters, namely, the anointed of the Lord.

Abstemiousness constitutes today the predominant note at every one of the royal and imperial courts of the Old World, and the rulers who now occupy the thrones of Europe are as distinguished for their temperance alike in drinking and eating as their predecessors were the reverse. Thus King Humbert restricts himself to wine diluted with water, whereas his father, King Victor Emmanuel, the "Re Galant 'uomo," was wont to indulge in drunken carouses with his morganatic wife, the gamekeeper's daughter, Rosina, whom he created Countess of Mirafiore, and who used when inebriated to respond to his blows by hurling the crockery at his head. Emperor Francis Joseph's favorite beverage is Pilsener beer, which is served to him even at the grandest of state banquets, at the court of Vienna. He drinks but little wine, although the imperial cellars are the most celebrated in the world. Indeed, it is to his abstemiousness that he is chiefly indebted for the remarkable preservation of his elasticity, of his physical as well as mental vigor and of his health; this, too, in spite of a far heavier succession of misfortunes, national, as well as domestic, than fall to the share of most men. His predecessor on the throne, the semi-imbecile Emperor Ferdinand, was renowned for his drunken habits, and it is no secret that the appalling fits of epilepsy which wrecked his mind and rendered his abdication imperative, were, in most cases, the result of an excessive indulgence in what are described as "the pleasures of the table."

An Improvement in Bavaria.

The insanity that made necessary the removal of the late King Louis from the Bavarian throne, and that resulted in his tragic death, was, according to the official diagnosis of the medical authorities, superinduced by alcoholism, and under the circumstances those who were his subjects may rejoice that they are now governed by a regent who, in spite of his deriving a large proportion of his revenue, official as well as private, from the brewing and sale of beer, is not only temperate himself, but has also inculcated this particular virtue to his sons and grandchildren. In the adjoining kingdom of Wurtemburg a young and brilliant cavalry ocer who, even when serving with his Hussar regiment, was noted for his reluctance to participate in the drinking bouts of his fellow-officers at mess, has taken the place of the gross, sensual and semi-demented King Charles, who would have been deposed over and over again by his disgusted lieges had it not been for the care of his clever Russian wife, who practically governed the country after he had become mentally unbalanced through inebriety. The present Grand Duke of Baden succeeded to a brother who was deposed for lunacy due to the same causes, while the closing scenes of the long life of old King John of Saxony were saddened for his relatives and friends by the perpetration of a number of astounding freaks that could only be attributed to an excessive indulgence in stimulants. Indeed, the most extraordinary stories were current at the court of Dresden at the time of his demise, one foreign envoy leaving the Saxon capital at a few hours' notice in consequence of the gross indignity to which the aged monarch had subjected the diplomat's daughter at a state ball, while there are many who assert that the king survived for several years what they allege to have been merely his mock funeral, and that he was kept under restraint, an incurable maniac, in a monastery situated in the lonellest portion of the mountain region of Saxon Switzerland.

Those who have had the opportunity of glancing over the illustrated and comic papers of the fifties may possibly recall to mind the cartoons and caricatures which were published, especially by Punch, at the time of the international congress held at Paris at the close of the Crimean war. To Prussia was allowed no share or representation in the proceedings on the ground that she was not entitled to rank as one of the great powers of Europe, and the cartoons represent the Prussian king, Frederick William IV., clamoring in vain for admission to the congress, in a state of manifest inebriety, with his crown cocked on one side of his head, several champagne bottles under his arm, his face inflamed and his uniform unbuttoned, while the doorkeeper is urging him to "go home" on the ground that he had been dining, "not wisely, but too well." Sad to relate, this was no overdrawn picture in so far as the habits of the Prussian sovereign of that day were concerned. His excesses at the table were such that the most extraordinary scenes and incidents would ensue during the receptions and balls that followed the court dinners, the king being subject to all sorts of drunken hallucinations, some of which were ludicrous and others of exceedingly painful character. It must be said, however, in excuse for this poor king, who passed the last two years of his life under restraint (his younger brother acting as regent in his stead), that he was afflicted with the same painful and terribly depressing aural malady from which Emperor William is likewise suffering, and in which is doubtless responsible for many of this gifted young ruler's eccentricities. It is greatly to the credit of Emperor William that he should have shown the strength of character needed to restrain himself from seeking, like his grand-uncle and predecessor, alleviation for his often intolerable sufferings in stimulants.

King William's Escapades.

At The Hague two queens, the one a widow, the other a young girl in her teens, reign in lieu of old King William, whose name was a by-word throughout the civilized world in consequence of his debaucheries. The police records of Paris contain many references to his drunken freaks on the boulevards and in the great restaurants, while his behavior when intoxicated was such that on one memorable occasion the police authorities of the Canton de Vaud in Switzerland threatened him with arrest and subsequent expulsion, no matter whether he was king or not, if he persisted in outraging every sentiment of public decency and propriety.

Of Denmark it is merely necessary to repeat what has so often been said, namely, that its court is a pattern for the remainder of Europe in matters of temperance as well as in every other respect, and it is impossible to overestimate the good achieved by the influence of the aged queen and king, the latter presenting an agreeable contrast to his predecessor, whose court was such as to cause it to be subjected throughout the latter part of his reign to something akin to ostracism by the other crowned heads of Europe. The late King Charles of Sweden was famous as a bon vivant, and while not a drunkard, could by no means be regarded as a temperate man, whereas the views of his successor, King Oscar, are best shown by the significant fact that he has permitted his queen to join the Salvation Army, and his favorite son and namesake, Prince Oscar, to assume the presidency of the temperance movement in Sweden and Norway.

The young czarina of Russia, with her strong, high-principled mind, added to her cleverness and beauty, may be relied upon to counteract any disposition that her husband may have inherited from his ancestors in connection with a taste for stimulants. During his sojourn of several months in England prior to his marriage, however, he surprised those with whom he was brought into contact by his very un-Slavonic abstemiousness, Russians being noted for their hard drinking propensities. King Charles of Roumania, like King Leopold of Belgium, is temperate in the extreme, being far too cautious a man ever to permit his brain to become clouded by stimulants, while the king of Portugal, although he delights in conviviality and enjoys the reputation of being a good fellow in every sense of the word, has never been known as a heavy drinker. With regard to the king of Spain it can only be said that from his earliest infancy he has displayed a pronounced aversion to the bottle, and has objected to being brought up "by hand," as the saying is. It is to be hoped that this ill-will toward the bottle may continue throughout his life. Much apprehension need not be entertained on the subject, since the Bourbons have always been more noted for their excesses in eating than in drinking.

Queen Victoria's Influence.

But the sovereign to whose influence the growth of temperance is due more than to any one else is assuredly Queen Victoria, the doyenne of all the monarchs of the world. Her father and her uncles, particularly those who immediately preceded her on the throne, namely, King George IV. and King William IV., were typical "six-bottle" men, and seldom if ever went to bed sober, Carlton house, the residence of King George, being the scene of some of the most infamous drunken orgies of the present century. At the same time, the British court was renowned for the many scandals by which its atmosphere was tainted. No gentleman arose sober from table, and no gentleman uttered a single phrase without garnishing it with the most frightful and blood-curdling oaths. Queen Victoria was a young girl of barely 18 when she succeeded to the crown; yet, in spite of this, and of the influence by which she had been environed since her childhood, she quickly succeeded not only in purifying the court, but also in inaugurating an entirely different tone in society, the coarseness and drunkenness which had flourished until then giving away to refinement and abstemiousness. She was aided in her task by her blameless husband, the late prince consort, and since his death his good work in this particular has been carried on by his son, the Prince of Wales, to whom those interested in the cause of temperance owe a far greater debt of gratitude than most people would be willing to believe. For no one is more intolerant of inebriety and of the vulgarity which it invariable engenders than England's future king.

EMPRESS OF MANY HUSBANDS

The Wife of Menelik of Abyssinia Descended From the Queen of Sheba.

Chicago Record.

Not even Empress Eugenie, nor yet Queen Natalie of Servia, can boast of so romantic and stormy a career as the empress of Abyssinia, who, it must not be forgotten, is entitled to rank among the Christian sovereigns of the world. Unlike the two ladies in question, she can boast of royal blood in her veins, being, like her husband, descended in a direct line from the Biblical queen of Sheba. She bears the name of Taitoo, and by title is not only "empress" and "queen of queens," but she is "the sun and light of Ethiopia."

In common with all the princes and princesses of Abyssinia's ancient dynasty, she was exiled by Emperor Theodore, a usurper who committed suicide when the British stormed his stronghold of Magdala in the latter part of the '60s. She took refuge at the court of Goudar, where she met her cousin, Prince Menelik, and fell in love with him. They were about to be married when Emperor Theodore suddenly invited them back to his court, assuring them of not only the security of their lives and property, but also of his favor.

Complying with his invitation, they returned, but with evil results so far as their mutual attachment was concerned. For they had no sooner presented themselves before Theodore than he fell in love with the Princess Taitoo and insisted on making her his wife, giving to Prince Menelik one of his own daughters in marriage.

Empress Taitoo, as she had now become, was subjected to such ill-treatment by her savage husband that his death came to her in the shape of a deliverance from untold misery. She quickly consoled herself by conferring her hand and her heart upon a general of the name of Ualde Gabriel. On his being killed in battle two years afterward she became the wife of Gen. Tackle Ghiorghis, commander-in-chief of the army of the king of Tigre. Dissatisfied with the union, she obtained a divorce from him and then became the wife of the governor of Egiou, but had not lived with him more than three months before Emperor John, who had succeeded Theodore, caused him to be thrown into prison and executed.

Rendered desperate by her matrimonial misadventures, the empress sought refuge in the convent of Debrá-Meni and became a nun. Convent life palled upon her, and accordingly she obtained a dispensation from her vows, and married a man of the name of Zeccaragagiou, whose only merit seems to have been his wealth, and who ill-used her in the most shameful manner, at times flogging her unmercifully. Making use of the old-fashioned plea that she was anxious to pay a visit to her mother, she managed to get away from him and to take refuge in a neighboring province, carrying away with her a considerable portion of his wealth.

It was while living with her brother in the Ephreta province in 1882 that she was brought into contact again with her former lover and fiance, Menelik, who had meanwhile become king of Shoa. The meeting had the effect of reviving all the old-time infatuation between the two, and, in spite of his being married, Menelik persuaded the ex-Empress Taitoo to take up her abode with him. It was due to her clever and sagacious counsels that Menelik formed that alliance with Emperor John which had the result of assuring to him the succession to the latter's throne.

Emperor John was not ungrateful for the support which he thus received from Taitoo and in return gave her all the assistance that lay in his power in the bitter fight which she was compelled to wage against Menelik's wife, Queen Tofana, before the latter was finally divorced, and, according to popular report, poisoned, her death having followed the dissolution of the marriage.

Taitoo was thus left without a rival in the affections of Menelik and was married to him with imposing ceremonies in 1885. Now, in spite of her being more than 40 years old, she still retains marvelous influence over her husband, who follows her advice in almost everything. Indeed, the astonishing sagacity with which he has managed for ten years past to oppose all the efforts made by the Italian government in the shape of intrigue and of armed attacks to obtain possession of his country is attributable, in the main, to the cleverness of his dusky consort.

THE CHARTER OF THE CITY OF SEATTLE.

ARTICLE I.

General Rights and Liabilities.

Section 1. The municipal corporation now existing and known as the City of Seattle, shall remain and continue a body politic and corporate in name and in fact, by the name of "The City of Seattle," and by that name shall have perpetual succession, may sue and defend in all courts and places, and in all matters and proceedings whatever, and may have and use a common seal, and alter the same at pleasure, and may purchase, receive, hold and enjoy real and personal property within and without the corporate limits of the City of Seattle, and may sell, convey, mortgage and dispose of the same for the common benefit, and may receive bequests, devises, gifts and donations of all kinds of property within and without the city for its own use and benefit, or in trust for charitable or other public purposes, and do all acts necessary to carry out the purposes of such gifts, bequests, devises and donations, with power to manage, sell, lease or otherwise dispose of the same in accordance with the terms of the gift, bequest, devise or trust.

Sec. 2. The public buildings, lands and property, all rights of property and rights of action, all moneys, revenues and income belonging or appertaining to the City of Seattle, are hereby declared to be vested in the said City of Seattle.

Sec. 3. The City of Seattle shall continue to have, hold and enjoy all public buildings, lands, wharves, waters, property real and personal, streets, alleys and other public places, rights of property, rights of action, suits, actions, moneys, revenues, taxes, licenses, income, books, documents, records, archives, claims, demands, and generally all things in possession and action of every nature and description, and shall be subject to all obligations, debts, liabilities, dues and duties, of the existing municipality.

Sec. 4. Suits, actions and proceedings may be brought in the name of the City of Seattle for the recovery of any property, money or thing belonging thereto, in law or in equity, or dedicated to public use therein, or for the enforcement of any rights of or contracts with said city, whether made or arising or accruing before or after the adoption of this charter; and the adoption of this charter shall not operate to abate or discontinue any existing suit, action or proceeding in court or elsewhere, to which said city is a party.

Sec. 5. All contracts of every description heretofore duly and legally made and entered into by the City of Seattle, by virtue of any existing law, shall remain valid and be binding upon the City of Seattle, to the extent only that they are now valid and binding upon the City of Seattle.

Sec. 6. The adoption of this charter shall not affect any special or local assessment, re-assessment or proceeding relating thereto, which may be wholly or partly completed or pending before the city council, or any board or officer at the time of such adoption, but all such assessments, re-assessments and proceedings may be completed under the provisions of this charter; and all things done prior to the adoption of this charter, relating to any such assessment, re-assessment or proceeding now pending or remaining uncompleted, shall be held to be a compliance with the provisions of this charter relating thereto, in so far as such provisions are substantially the same as the provisions of the charter superseded hereby, relating to the same matter, or all such assessments, re-assessments and proceedings may be completed under the provisions of the charter which is superseded by this charter or under the provisions of general laws applicable thereto.

Sec. 7. All the provisions of this charter which are substantially identical with provisions of the charter superseded hereby, shall be construed as continuations of such former provisions and not as new enactments.

In all cases of claims for damages against the city, on which part of the time allowed for presenting such claims to the city council and filing the same with the city clerk has already elapsed at the time of the adoption of this charter, the portion of time already elapsed shall be counted as a part of the six months fixed by this charter for presenting and filing such claims.

ARTICLE II.

Boundaries, Wards and Precincts.

Section 1. The City of Seattle shall include within its limits the following lands and territory, to wit: The north half of section 17, all of sections 3, 4, 5, 6, 8, 9, and 10, in township 24 north, of range 4 east, and the south half of sections 19 and 20, and all of sections 27, 28, 29, 30, 31, 32, 33 and 34, in township 25 north, of range 4 east, and the south half of section 24, and all of sections 25 and 36, in township 25 north, of range 3 east, and including also the water fronting said above described lands westward to the center of Elliott Bay and the Duwamish River, and eastward to the middle of Lake Washington, and all the water of Lake Union south of a line running east and west through the center of sections 19 and 20, in township 25 north, of range 4 east, beginning at a point in the center of Lake Washington, which is the northeast corner of the limits of the City of Seattle on the 10th day of October, A. D. 1890; thence northerly along the center of Lake Washington to the intersection with the center line of section 16, in township 25 north, range 4 east, W. M., produced eastwardly; thence west in the waters of Lake Washington and Union Bay along said south line produced, to an intersection with the east line of said section 16, produced southerly; thence north in the waters of Union Bay along said east line produced to the shore of said Union Bay, and thence north along the east line of said section 16 and of section 9 in said township and range to the quarter section corner on the east line of said section 9; thence west along the center line of said section 9 to the quarter section corner in the west line thereof; thence north along the east lines of sections 8 and 5 in said township and range to the north line of said township 25 north; thence west along said township line to the quarter section corner in the north line of section 1, in township 25 north, range 3 east, which latter point is the northeast corner of the present corporate limits of the town (now city) of Ballard; thence south along the center line of said section 1 and sections 12 and 13 in said township 25 north, range 3 east, to the southeast corner of government lot 2, in said section 13, the said last named line being also the easterly boundary of said city of Ballard; thence west along the south boundary of said city of Ballard to the center of Salmon Bay; thence northwesterly following the present corporate limits of the city of Ballard along the center line of Salmon bay to deep water in Puget sound or Admiralty inlet; thence southerly along said main channel to a junction with the main channel of Elliott bay; thence easterly and southeasterly along the main channel of Elliott bay to a point in the center of Elliott bay in a line with the westerly line of section 24, township 25 north, range 3 east, produced south; thence north along the said west line of section 24 produced to the quarter section corner in the west line of said section 24; thence east, following the limits of the city of Seattle on October 10, A. D. 1890, along the center line of said section 24, and of sections 19 and 20, in township 25 north, range 4 east, to the east line of said section 20; thence south, following the limits of the city of Seattle on October 10, A. D. 1890, along the east line of said section 20 to the southeast corner thereof; thence east, following the limits of the city of Seattle on October 10, A. D. 1890, along the north line of sections 28 and 27 in township 25 north, range 4 east, to the shore of Lake Washington; thence easterly in the waters of Lake Washington, following the limits of the city of Seattle on October 10, A. D. 1890, to the northeast corner of the limits of the city of Seattle on October 10, A. D. 1890, and the place of beginning, including all waters embraced within the boundaries described, together with such other territory, if any, heretofore or hereafter added to said city by virtue of the general laws of the state of Washington.

Sec. 2. The City of Seattle is hereby divided into nine wards, designated and bounded as follows:

The First Ward shall include all that part of the city within the following boundaries, to wit: Commencing at the intersection of the center line of Yesler Way with the center line of Ninth Avenue South, and running thence south along the center line of Ninth Avenue South to the center line of Jackson street, thence east along the center line of Jackson street to the center line of Twelfth Avenue South, thence south along the center line of Twelfth Avenue South to the center line of Hanford street; thence east along the center line of Hanford street to the center line of Ninth Avenue street to the east line of section 17, in township 24 north, of range 4 east, thence south on the said section line to the quarter section corner on the said east line of section 17, thence west along the south boundary of the city to the west boundary of the city, thence north along the west boundary of the city to a point in Elliott bay where the center line of Yesler Way produced intersects said west boundary, thence east in a straight line along the center line of Yesler Way produced and Yesler Way to the point of beginning.

The Second Ward shall include all that part of the city situated south of the center line of Yesler Way and Yesler Way produced, and lying east of the First ward.

The Third Ward shall include all that part of the city within the following boundaries, to wit: Commencing at the intersection of the center line of Yesler Way with the center line of Broadway and running thence north along the center line of Broadway to the center line of Madison street, thence southwesterly along the center line of Madison street and Madison street produced, to the point of intersection with the center line of Yesler Way produced, thence east in a straight line along the center line of Yesler Way produced and Yesler Way to the point of beginning.

The Fourth Ward shall include all that part of the city within the following boundaries, to wit: Commencing on the center line of Madison street at the point where the same is intersected by the center line of Minor Avenue, and running thence northerly along the center line of Minor Avenue to the center line of Olive street, thence westerly along the center line of Olive street to the center line of Stewart street, thence westerly along the center line of Stewart street to the north boundary of the First ward, thence east along said north boundary to the point of intersection with the center line of Madison street produced, thence easterly in a straight line along the center line of Madison street to the point of beginning.

The Sixth Ward shall include all that part of the city within the following boundaries, to wit: Commencing at a point on the west boundary of the city where the same is intersected by the center line of Denny Way produced, and running thence east in a straight line along the center line of Denny Way produced and Denny Way to the center line of Ninth avenue, thence southerly along the center line of Ninth Avenue to the center line of Olive street; thence westerly along the center line of Olive street to the center line of Stewart street, thence westerly along the center line of Stewart street to the north boundary of the First ward, thence west along said north boundary to